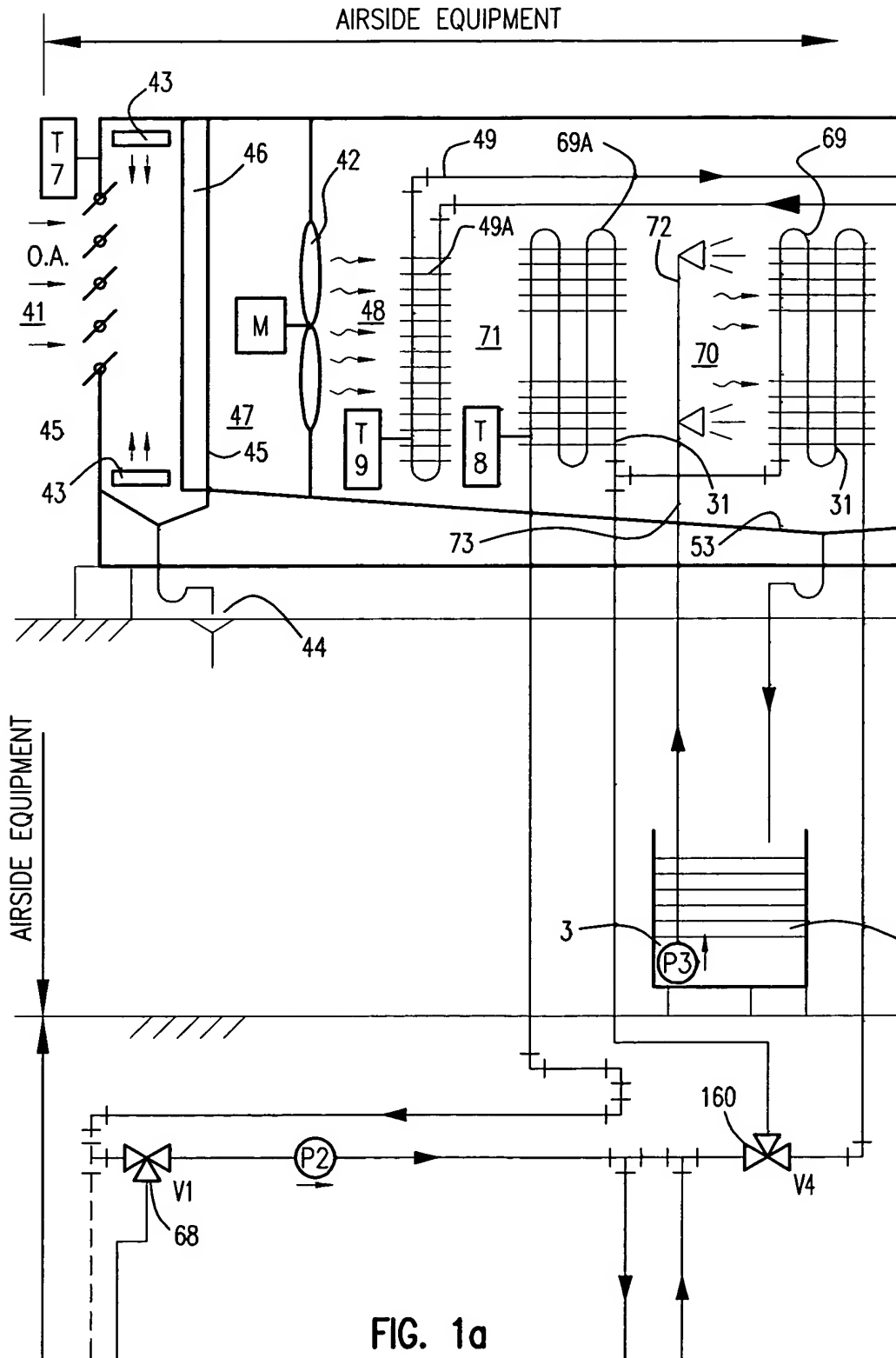
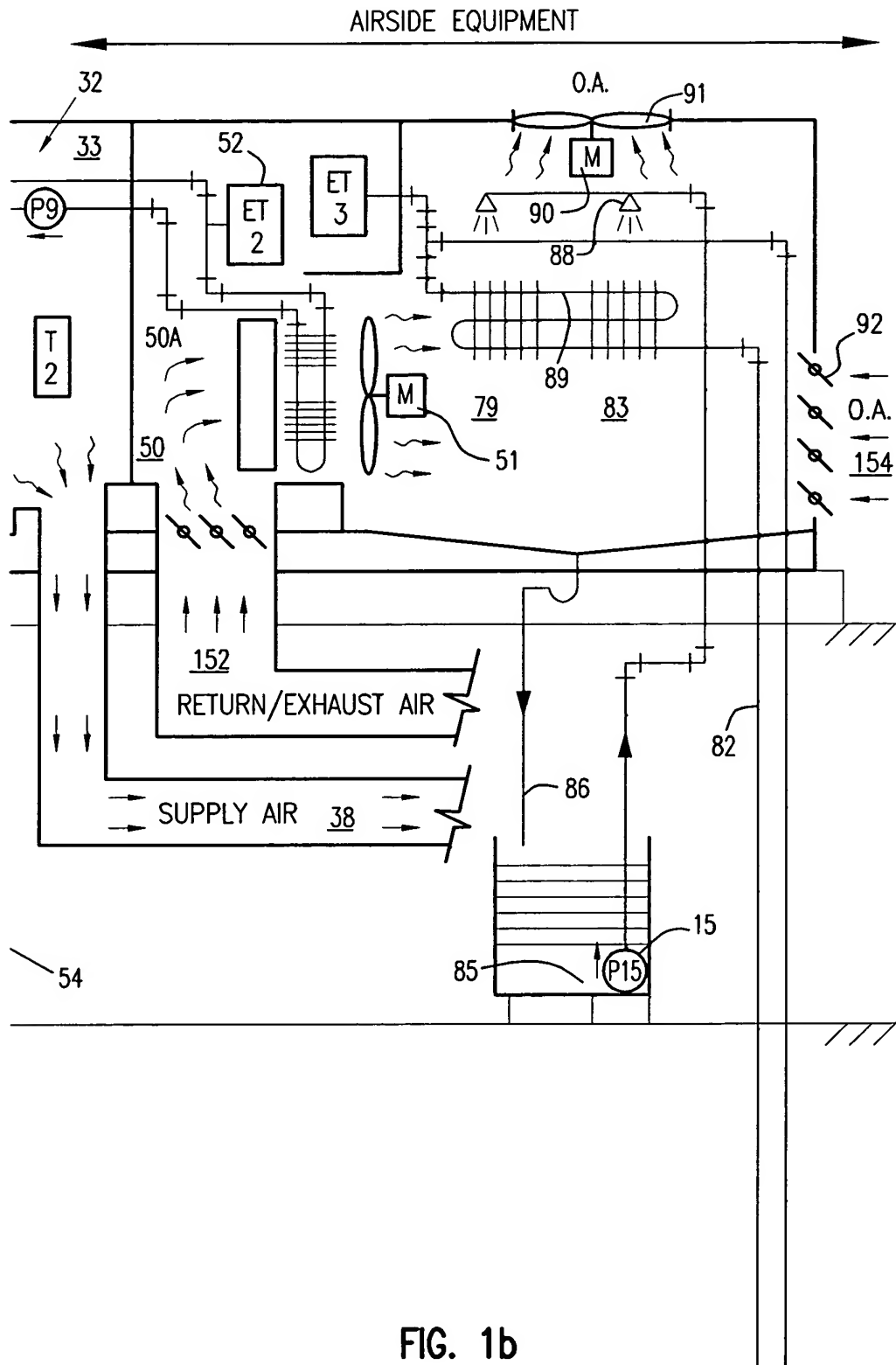


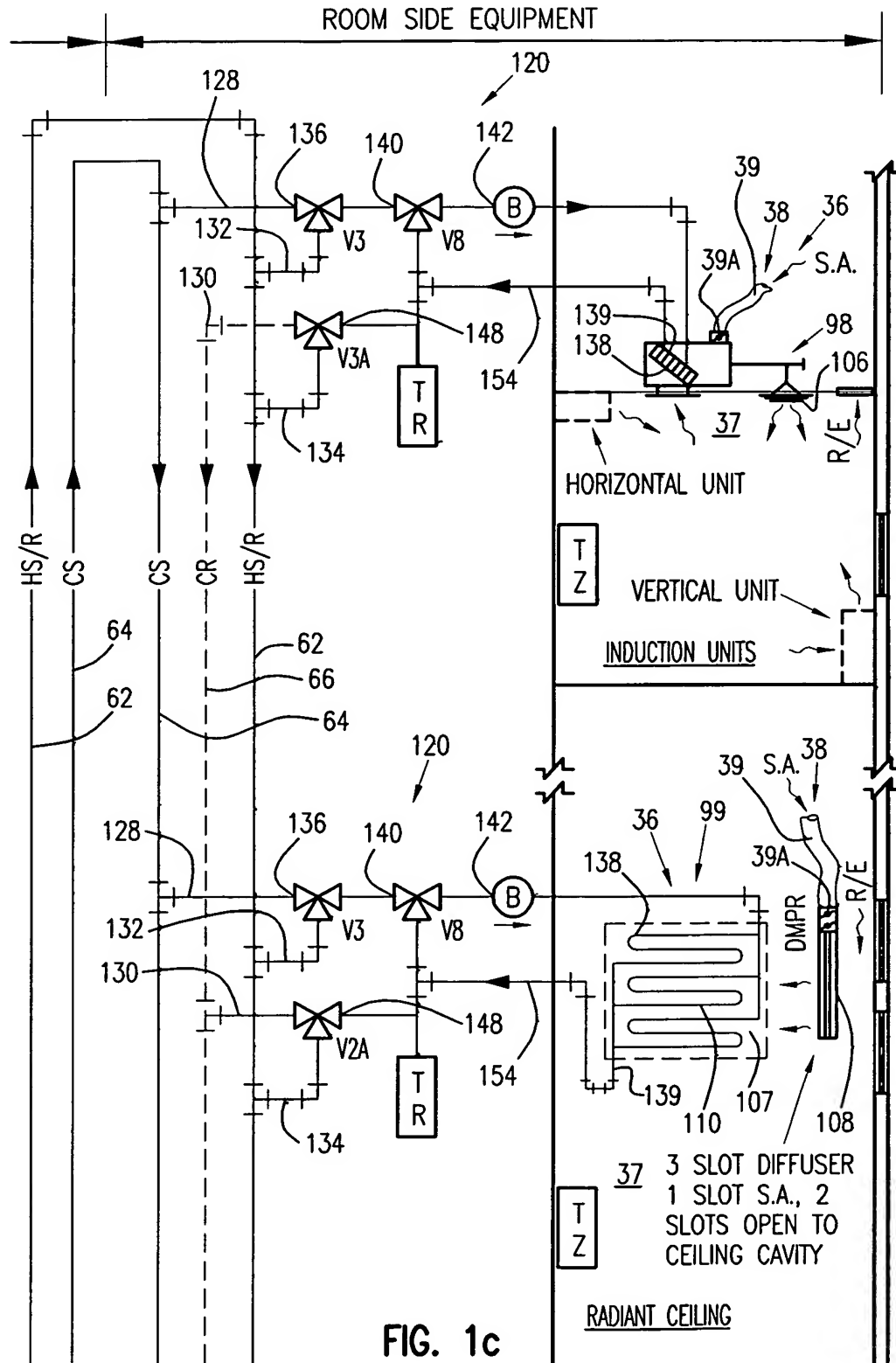


REPLACEMENT SHEET





# REPLACEMENT SHEET



# REPLACEMENT SHEET

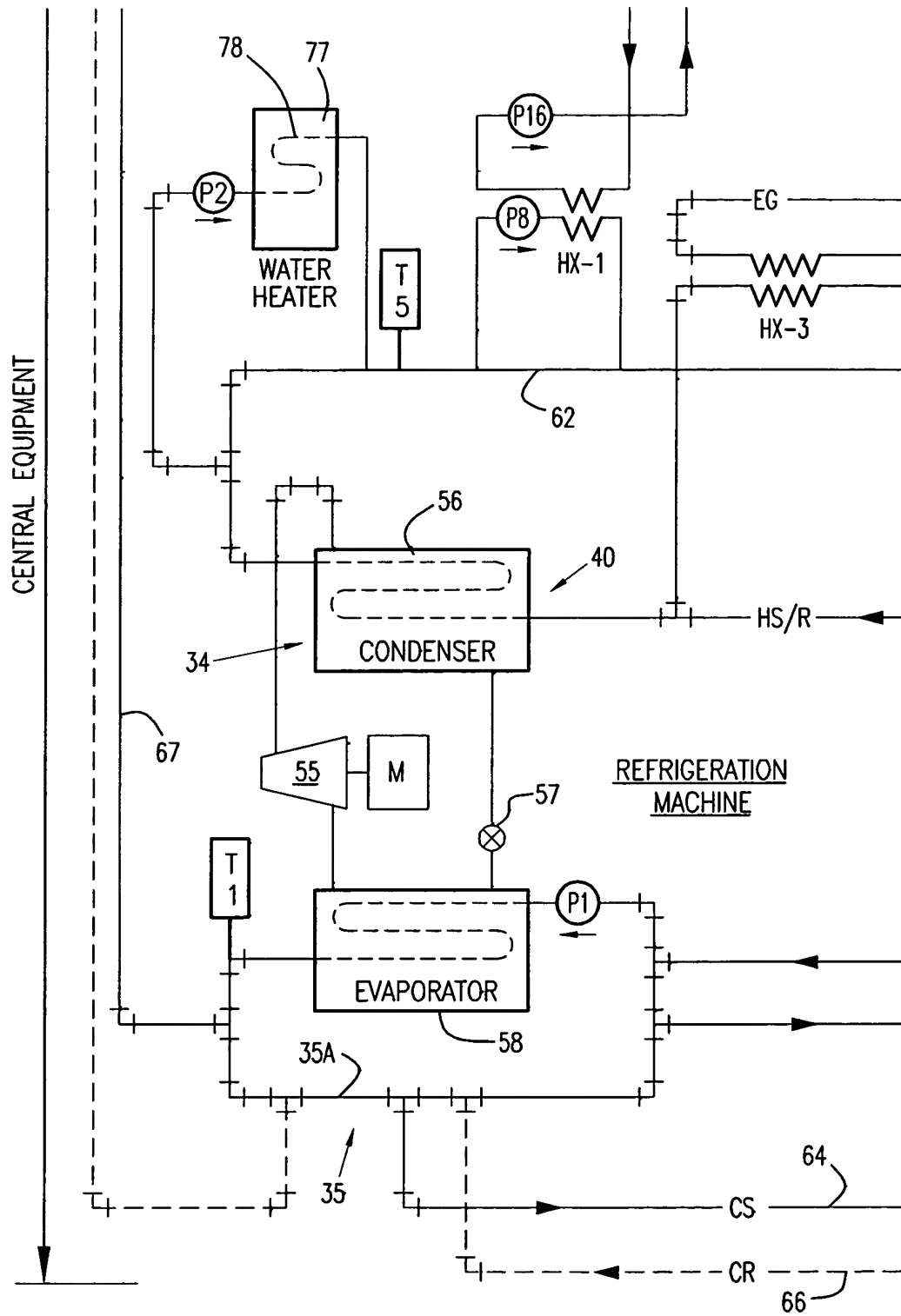


FIG. 1d

REPLACEMENT SHEET

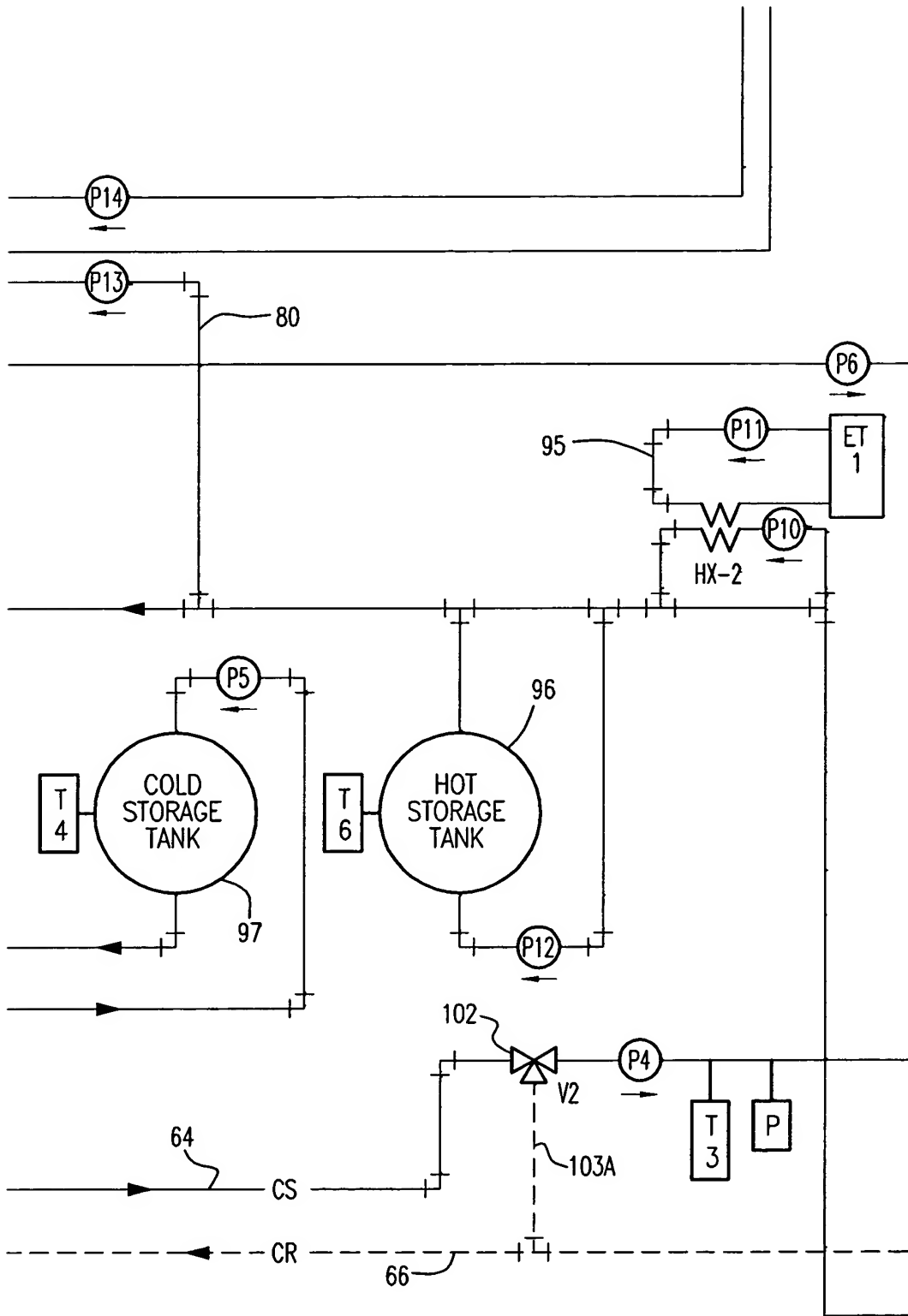


FIG. 1e

# REPLACEMENT SHEET

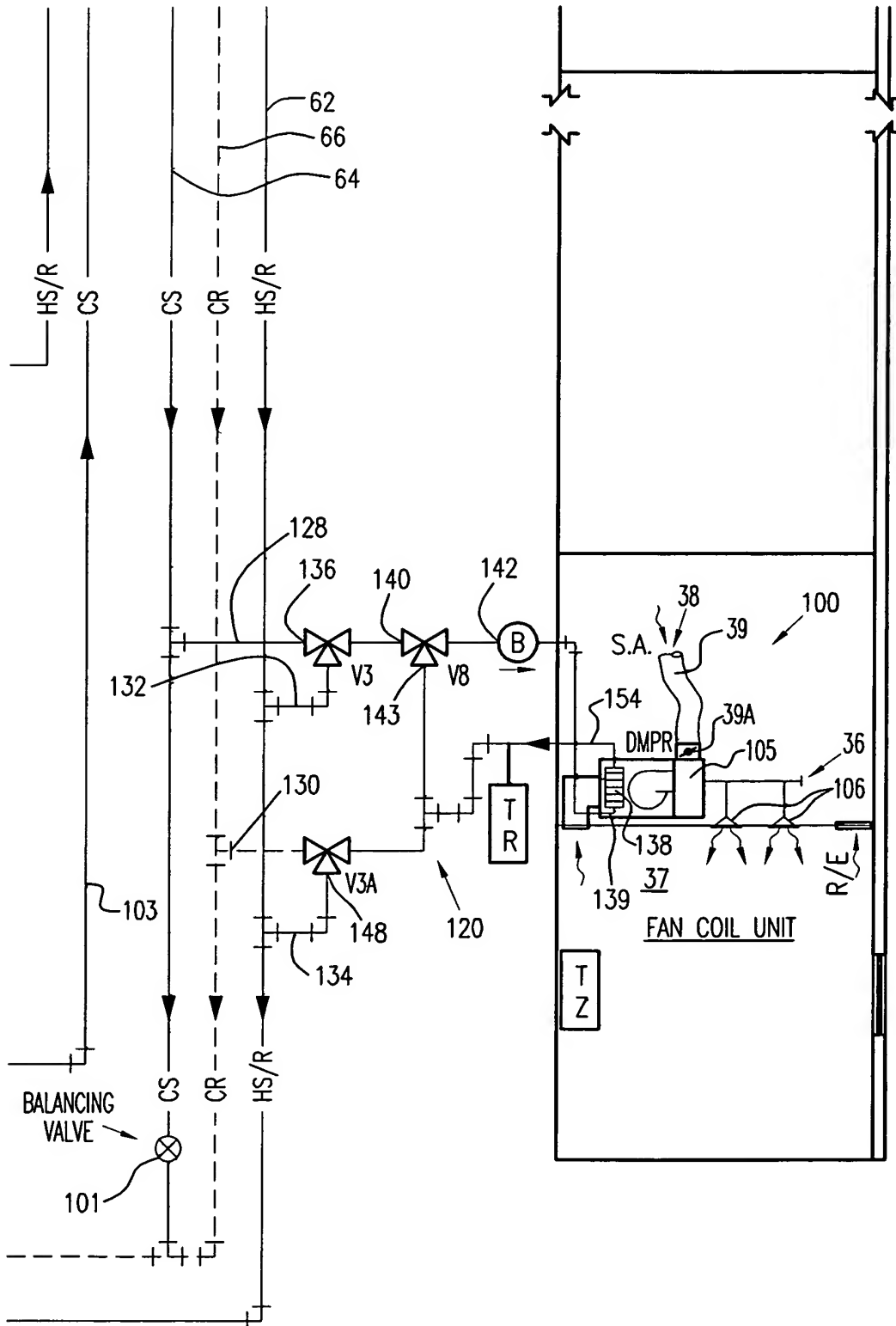






FIG. 1f

**FIG. 1g**

# REPLACEMENT SHEET

|  |   |
|--|---|
| ——CS——   | COLD WATER SUPPLY PIPE  |
| ----CR----   | COLD WATER RETURN PIPE  |
| —HS/REG—   | HOT WATER COMBINATION SUPPLY & RETURN PIPE  |
| ——EG——   | ETHYLENE GLYCOL SUPPLY OR RETURN PIPE   |
| O.A.   | OUTSIDE AIR   |
| S.A.   | SUPPLY AIR (48 DEG. DRY BULB. YEAR ROUND)   |
| R/E  | RETURN / EXHAUST AIR TO EVAPORATIVE COOLER  |
| D.A.   | DISCHARGE AIR TO ATMOSPHERE   |
|  ET-1 | SYSTEM EXPANSION TANK   |
|  ET-2 | RUNAROUND COILS EXPANSION TANK  |
|  ET-3 | EVAPORATIVE COOLER EXPANSION TANK   |
|       | HEAT EXCHANGER  |
| HX-1   | SPRAYED COIL / HUMIDIFICATION HEAT SOURCE HEAT EXCHANGER                          |
| HX-2   | SALVAGE ENERGY TO REMOTE HEATING LOADS HEAT EXCHANGER                             |
| HX-3   | HOT WATER / ETHYLENE GLYCOL / EVAPORATIVE COOLER HEAT EXCHANGER                   |
| V <sub>B</sub>   | MODULATING 3 WAY, ZONE BLENDING VALVE   |
| V <sub>1</sub>   | MODULATING 3 WAY, MIXING VALVE (AIR SIDE HEATING HUMIDIFICATION AND COOLING COIL) |
| V <sub>2</sub>   | MODULATING 3 WAY, MIXING VALVE (ROOM SIDE COLD WATER LOOP)                        |
| V <sub>3</sub>   | 2 POSITION 3 WAY CHANGE OVER VALVE (UP STREAM OF ROOM SIDE EQUIPMENT)             |
| V <sub>4</sub>   | 2 POSITION 3 WAY DIVERTING VALVE  |
| V <sub>3A</sub>  | 2 POSITION 3 WAY CHANGE OVER VALVE (DOWN STREAM OF ROOM SIDE EQUIPMENT)           |

## PUMP AS FOLLOWS

ALL PUMPS ARE CONSTANT SPEED UNLESS OTHERWISE INDICATED

- \* INDICATES VARIABLE SPEED DRIVE PUMP
- \*\* INDICATES PUMP CONTROLLED BY A DISCHARGE PRESSURE CONTROLLER
- ✓ INDICATES PUMPS ARE CONTROLLED BY TEMPERATURE

- PUMP B – BLENDING PUMP, ROOM SIDE EQUIPMENT
- PUMP 1 – COLD WATER, EVAPORATOR PRIMARY LOOP
- PUMP 2 – COLD WATER SUPPLY TO AIRSIDE EQUIPMENT COOLING COIL
- ✓\* PUMP 3 – COOLING COIL SPRAY PUMP
- \*\* PUMP 4 – COLD WATER SUPPLY TO ROOM SIDE LOOP
- PUMP 5 – COLD WATER STORAGE TANK BYPASS
- PUMP 6 – HOT WATER COMBINATION SUPPLY / RETURN LOOP
- PUMP 7 – WATER HEATER BYPASS
- ✓\* PUMP 8 – HX-1 BYPASS
- ✓\* PUMP 9 – PREHEAT / PRE COOL RUN AROUND COIL LOOP

FIG. 2a



## REPLACEMENT SHEET

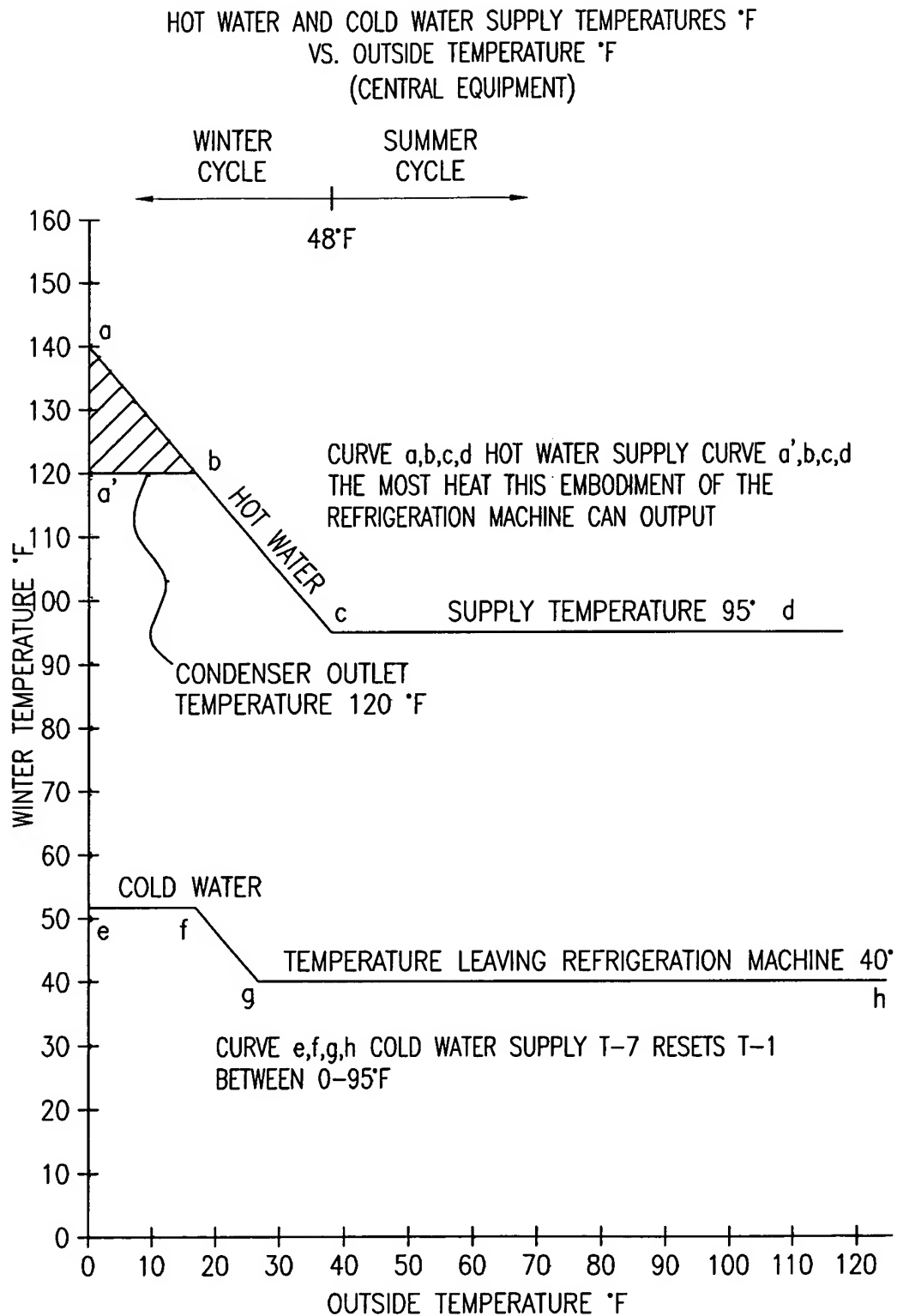
PUMP 10 - HX-2 BYPASS  
PUMP 11 - HX-2 SALVAGE ENERGY, SUPPLY / RETURN LOOP  
PUMP 12 - HOT WATER STORAGE TANK BYPASS  
PUMP 13 - HX-3 BYPASS  
PUMP 14 - EVAPORATIVE COOLER LOOP (HOT WATER, HX-2,  
ETHYLENE GLYCOL)  
PUMP 15 - EVAPORATIVE COOLER SPRAY PUMP  
PUMP 16 - HX-1 SECONDARY LOOP (HUMIDIFICATION HEATING  
SOURCE)

### THERMOSTAT AS FOLLOWS

T1 - COLD WATER SUPPLY FROM EVAPORATOR, 40 DEGREES  
SUMMER, RAMP TO 52° WINTER  
T2 - AIR SIDE SUPPLY AIR, 48 DEGREES DRY BULB, WET BULB,  
DEW POINT YEAR ROUND  
T3 - COLD WATER SUPPLY TO ROOM SIDE EQUIPMENT, 52 DEGREES  
YEAR ROUND  
T4 - COLD WATER STORAGE TANK  
T5 - HOT WATER SUPPLY 95 DEGREES SUMMER, RAMP UP TO 120  
DEGREES WINTER  
T6 - HOT WATER STORAGE TANK  
T7 - OUTSIDE TEMPERATURE  
T8 - REHEAT COIL DISCHARGE TEMPERATURE  
T9 - RUN AROUND PREHEAT COIL DISCHARGE TEMPERATURE  
TZ - ROOM SIDE ZONE THERMOSTAT

**FIG. 2b**

# REPLACEMENT SHEET



**FIG. 3**

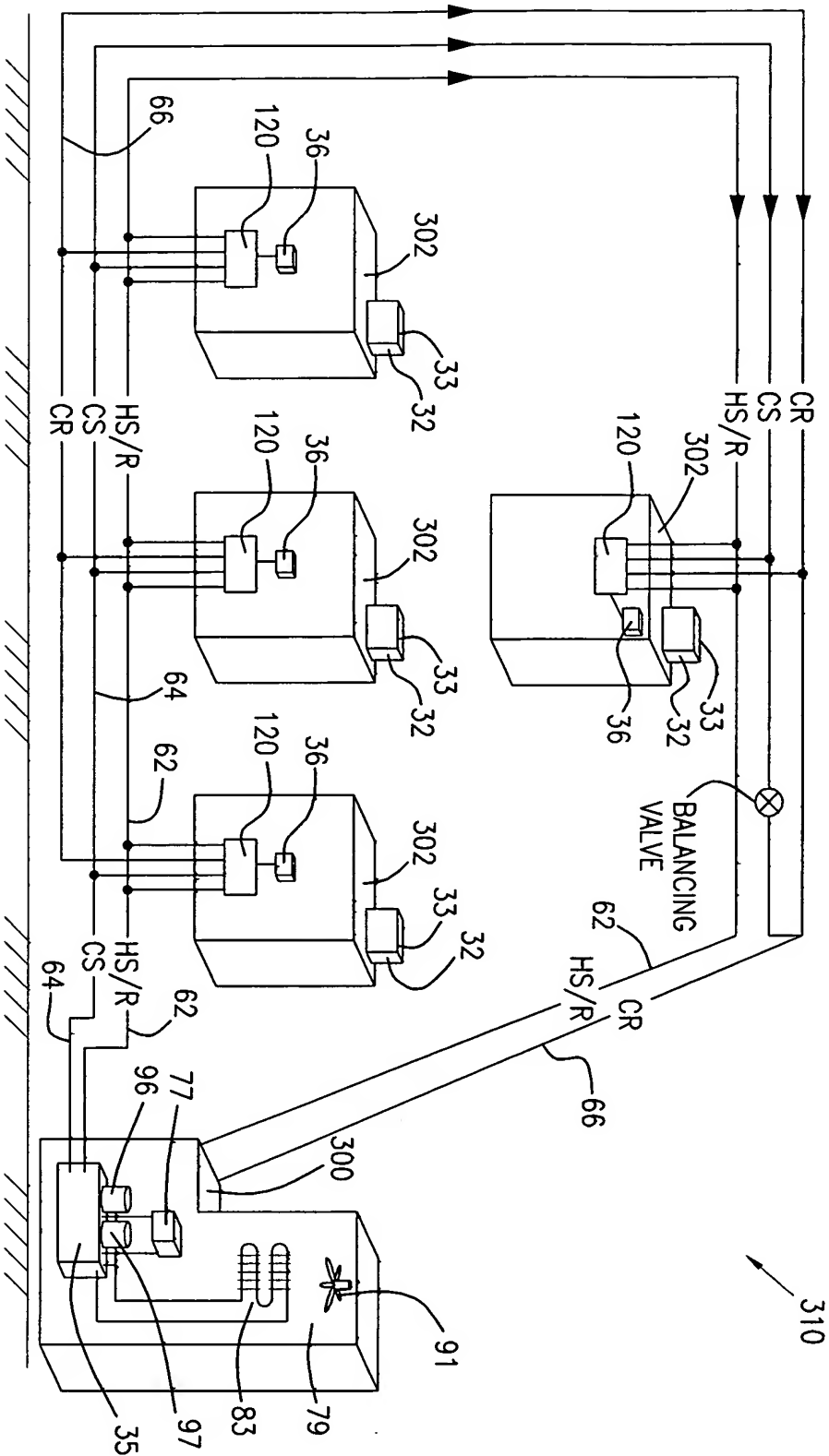


FIG. 5